Hydrologic Model Manager

Short Name	CVGSM
Long Name	CENTRAL VALLEY GROUNDWATER AND SURFACE WATER MODEL
Description	
Model Type	Finite Element, Quasi-three-dimensional.
Model Objectives	To simulate water distribution/ movement throughout the entire Central Valley of California. This model is actually a speciffic application of the more general IGSM (Integrated Groundwater/Surface Water Model)
Agency _Office	Bureau of Reclamation, Mid-Pacific Region, Division of Planning and Technical Services, Water Resources Branch.
Tech Contact	Nigel Quinn (MP-700, 916-978-5079); Jeff Sandberg or Derek Hilts (MP-710) 916-978-5124 FTS-460-5124
Model Structure	CVGSM assumes that most water use characteristics for the Central Valley can be described in terms of 21 regional units. It is capable of producing many mass balance budgets for each of the 21 regions.
Interception	
Groundwater	
Snowmelt	
Precipitation	
Evapo-transpiration	
Infiltration	
Model Paramters	Model accounts for virtually all parameters associated with both ground water and surface water systems: including, but not limited to, precipitation, ET, pumpage, applications, soil factors, return flows, subsidence, diversions, water rights, chemical species, cropping patterns and timing, soil moisture, and stream characteristics.
Spatial Scale	CVGSM model consists of 1392 elements covering the Central Valley floor. The average size of each element is 14 square miles. The finite element method is used. Precision limited by data. IGSM may be applied to any area and segmented into any number of subareas.
Temporal Scale	Monthly; output either monthly or annual, or combination.
Input Requirements	Extensive land use patterns, streamflow regimes, precipitation records, crop patterns, surface water diversions, groundwater pumping records and much more.
Computer Requirements	Fortran Code requiring 2+mb of RAM on 80386 based machine.
Model Output	Stream or groundwater hydrographs. Mass balance budgets for streamflow, groundwater, soil, land and water use, all by regional basis.
Parameter Estimatn Model Calibrtn	Done internally using calibration data files.
Model Testing Verification	Basic IGSM code has been extensively used in California on many different applications; code has been continually revised, updated, upgraded, and verified against actual data and other models.
Model Sensitivity	Sensitive to many of the input parameters as well as internal 'switches' for calculations and prioritization.
Model Reliabiity	Extensively revised and tested; results are very reliable provided input data

files are accurate and up-to-date.

Model Application	This model is an application of the general IGSM model.
Documentation	Summary report for CVGSM, user's manual and documentation exist for IGSM
Other Comments	Strengths: This model lends itself to a wide range of modeling efforts when large scale questions are important. It is very flexible. Weaknesses: The model is very data intensive and rather involved. It is not easily accessible to many first time users.
Date of Submission	8/10/1999 2:09:23 PM
Developer	
Technical Contact	
Contact Organization	